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MASSAGING ROLLER

Volkhard Eissmann

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[Massagerolle]

Inventor:	Volkhard Eissmann
Applicant:	Volkhard Eissmann

Testing certificate is furnished according to Art. 44 of the Patent Law.

The following data are obtained from the documents submitted by the applicant.

The invention concerns a massaging roller for the self-massage of the back and spinal column in particular, with a roller body having a rotating rolling surface.

A known massaging roller of this type has a hard roller body consisting, e.g., of wood, with a cylindrical external contour that forms a rolling surface. For massaging the back or the spinal column, the massaging roller is placed on the floor and the user places his back on the massaging roller, and a rolling of the back on the roller is induced by a back-and-forth movement of the body. The massaging roller can also be used while standing if it is pressed with the back against a wall instead of the floor. This does not exhaust the possibilities for use; there are innumerable ways for using the massaging roller for self-massaging the human body.

The known massaging roller is relatively heavy and costly to produce. Due to the nature of its material, it is relatively hard, which is often perceived to be unpleasant when used only occasionally. The hardness of this contact could indeed be reduced by a cushioned covering applied on the roller body. Such a measure does however increase the cost of the apparatus.

The purpose of the invention is to offer a massaging roller of the above type that facilitates a pleasant self-massage with a simple construction and cost-favorable production.

This problem is solved in that the roller body is flexible and is provided with a band-like stabilizing ring extending in the peripheral direction of the rolling surface and exerting an inward-directed holding force.

Due to the flexible properties of the roller body, the massaging roller can be better adapted to the body anatomy so that the massage can be considered pleasant. The form stability always present despite the flexible properties is assured by the band-like stabilizing ring that extends in the peripheral direction of the rolling surface along the entire periphery of the roller body. The stabilizing ring is not very extensible under the loads that arise so that it imparts an excellent support to the roller body. The holding force transferred by the stabilizing ring to the roller body can also favorably influence the hardness of the roller body so that massaging rollers with a different degree of hardness can be offered without great expense. Because there is no longer the need for rigid, hard carrier material, a lower weight can be realized with cost-favorable production.

Other advantageous refinements of the invention are described in the subclaims.

It is advantageous to produce the roller body of material with rubber-elastic properties.

In a preferred embodiment, the roller body is made hollow, which involves a cavity closed to the environment and is filled with a pressure-exerting medium so that the roller body is under an internal pressure. Because the solubilizing ring solidly encompasses the periphery of the roller body, the hardness of the massaging roller can be adjusted over the height of the internal pressure without problem. It is advantageous here if the internal pressure can be adjusted variably so that the same massaging roller can be easily adapted to the prevailing conditions of use. If air is involved in the pressure-exerting medium, the internal pressure can be increased, e.g., with a commercial air pump.

The above, essentially cylindrical design of the rolling surface is also understood to be a shape configuration in which the rolling surface has a peripheral constriction caused by the stabilizing ring. This is usually to be specified if the roller body is a hollow body consisting of rubber-elastic material that is under an internal pressure. The depth of the constriction in comparison to the adjacent surface sections of the rolling surface is dependent here on the level of internal pressure. The higher the latter, the more strongly the zones of the hollow body lying alongside the stabilizing ring are expanded and attempt to assume a spherical form.

The hollow body is preferably partially filled with a liquid, e.g., water. Because the liquid collects in the lower-lying region of the hollow space, a low-lying point of gravity always results, which counteracts an unintended rolling away of the massaging roller.

The stabilizing ring can indeed be a constituent of the roller body integrated into the latter and formed, e.g., of a selective material thickening of the roller body. An embodiment in which the stabilizing ring is desired as a separate part encompassing the outside of the roller body, where the stabilizing ring is preferably formed of a belt that consist, e.g., of material, is simpler and more cost-favorable. It can involve material as is ordinarily used in safety belts of cars and which has an extremely low tendency to stretching.

It is essentially possible without special production tools if a ball under internal pressure and having an original spherical form is used as the roller body, e.g., a gymnastics ball that is deformed by applying the stabilizing ring in the equatorial region so that a roller-like shape is obtained.

The invention is elucidated in more detail in the following with reference to the attached drawing.

Figure 1 shows a preferred embodiment of the massaging roller in perspective representation.

Figure 2 shows a cross section through the massaging roller along the line II-II from Figure 1 in the region of the band-like stabilizing ring.

Figure 3 shows a side view of the massaging roller from Figure 1 with the viewing direction according to arrow III.

The massaging roller 1 of the exemplary embodiment has a roller body 2. The latter is flexible in that it consists of material with rubber-elastic properties. Rubber or another elastomer is selected as the roller body material in the exemplary embodiment. The massaging roller 1 has a longitudinal axis 3 that simultaneously forms the longitudinal axis of the roller body 2. An essentially cylindrical rolling surface 4 is provided on the outer periphery of the roller body 2; it also runs concentric to the longitudinal axis 3 in the cross section viewed in cross section according to Figure 2. The massaging roller can be placed with its rolling surface 4 on a support, e.g., a floor or a building wall. Such a support 5 is indicated in Figure 2. The user of the massaging roller can support the part of the body to be massaged on the massaging roller 1 and create a massaging effect on the body part in question by a back-and-forth rolling motion indicated by the double arrow 6. Tension in the back and spinal column can thus be treated in an excellent manner.

The roller body 2 of the exemplary embodiment is a hollow body 7 with a relatively thin wall 8 that tightly delimits a cavity 12. The cavity 12 contains a pressure-exerting medium that exerts a pressure against the inner surface of the cavity wall 8. This pressure-exerting medium is preferably air that was introduced through a filler opening 13 provided in the cavity wall 8. In practice, the hollow body 7 is pumped up in this manner. The filling can be done with a commercial air pump that can be applied on the filler opening 13. A check valve that prevents an

undesirable escape of air is preferably integrated in the latter. If air is to be released, it is done via a drainage opening that is preferably formed by the filling opening. An unblocking of the check valve is sufficient, which is effected, e.g., by depressing a pin.

If no particular arrangements were made, the hollow body 7 according to the example would assume a spherical form as is usual in balls with a spherical shape. So that the roll-like shape is adjusted with an essentially cylindrical rolling surface 4, a band-like stabilizing ring 14 that is laid around the hollow body 7 on the outside coaxially to the desired longitudinal axis 3 is additionally provided. The hollow body 7 is completely enclosed by the stabilizing ring 14 in a plane running at right angles to the longitudinal axis 3. The diameter of the stabilizing ring 14 essentially matches the desired diameter of the roller body 2 and is less than the spherical diameter of the hollow body 7 with the stabilizing ring 14 removed. This results in the stabilizing ring 14 exerting an inward-directed holding force on the hollow body wall 8 and the hollow body 7 being squeezed together in the annular plane so that a cylinder-like shape results from the original spherical shape. The hollow body 7 acted upon by the band-like stabilizing ring 14 thus usually has a central hollow-cylinder-like section 15 that is limited at both front faces by a calotte-like section 16. The longitudinal axis 3 runs through the center of the two calotte-like sections 16.

It is understood that the band-like stabilizing ring 14 is comprised of a material that has little or no tendency to stretching. A material should be selected that experiences extremely little to no peripheral stretching at least at the internal pressures arising with the use of the massaging roller 1. It is only assured thereby that the roller shape is always retained.

The band-like stabilizing ring 14 expediently has a width that is less than that of the cylinder-like rolling surface 4. A narrow band or a narrow belt that equatorially encloses the hollow body 7 having the original spherical shape can be used as the stabilizing ring 14.

A great advantage of the massaging roller 1 according to the example consists in that its hardness is variably adjustable. This is done simply by increasing or reducing the internal pressure. The stabilizing ring, against which the internal pressure acts, takes care of shape maintenance independently of the internal pressure. Any user of the massaging roller can vary the hardness according to need without any problem. If a material with rubber-elastic properties is primarily involved in the flexible material of the roller body 2, an at least slight constriction 17 will generally set in at the application site of the stabilizing ring 14. This arises from the fact that the front-face rolling zones not supported by the stabilizing ring 14 are expanded unhindered by the internal pressure prevailing in the hollow body 7 so that bulges 19 of the hollow body wall 8 result laterally at the edge of the stabilizing ring 14. In the sense of the invention, there is also an essentially cylindrical rolling surface in the case of such a constriction 17. The manipulation and mechanism of action of the massaging roller 1 are not impaired by such a constriction 17.

The thickness of the stabilizing ring 14 measured in cross section is preferably extremely low so that it hardly applies. It encloses the hollow body 7 in the manner of a belt or girdle. It is expedient to produce the stabilizing ring of flexible material. For example, a closed endless belt 18 is involved, which consists in particularly of textile material or fabric material. It involves a component separate from the hollow body 7 that is fixed in position relative to the hollow body 7 merely due to the prevailing radial holding force. Additional fastening agents or adhesives are thus superfluous. The massaging roller 1 according to the example is thus comprised of only two parts.

Due to the flexible and particularly elastic design of the hollow body wall 8, the roller body 2 is always pliable to a certain extent. This permits the massaging roller 1 to be adapted to the anatomy of the massaged body part so that the occurrence of injury to the anatomy of the massaged body part is counteracted during careless manipulation. Additional cushioning coverings can be dispensed with.

To increase the hardness of the roller, it is also conceivable to make the diameter of the stabilizing ring 14 variable. This would require a suitable turnbuckle or the like on the stabilizing ring that would cause irregularities that could be disturbing in the use of the massaging roller. It is thus preferable to regulate the hardness via the internal pressure in the case of a periphery-invariable stabilizing ring 14.

The roll-like shape of the roller body 2 could also be assured by utilizing an appropriately preshaped hollow body 7. The enclosing stabilizing ring 14 would then essentially contribute to retaining the prescribed shape of the roller body 2 by acting on the internal pressure and leaving the subsequent massage application essentially unchanged. The use of a spherical elastic ball or balloon as the starting product for the roller body 2 expediently essentially elongated-oval in longitudinal section has substantial cost advantages that can reflect back on a commercial product. For the same reason, there are also advantages relative to an embodiment in which the stabilizing ring is an integral component of the roller body and is formed of an appropriately shaped annular section of the hollow body wall 8 (not shown). The stabilizing ring can be attained here, e.g., by a reinforced design of the hollow body wall 8 in the annular section.

A liquid, especially water, can also be used, i.e., as the pressure-exerting medium, with which the hollow body 7 is filled. Due to the elastic expansion potential of the wall material of the hollow body 7, the pliability of the roller body 2 perceived as pleasant would always be assured during massage. A more advantageous design provides however for using a gaseous medium, especially air, as the pressure-exerting medium introduced into the cavity 12, and additionally filling the cavity 12 partially with a liquid, preferably water. The corresponding case occurs in the exemplary embodiment, where in Figure 2 the liquid only partially filling the cavity 12 is indicated at 22. Due to gravity, this liquid 22 always accumulates in the lower roller body

region so that the massaging roller 1 always has a point of gravity lying below the longitudinal axis 3, independently of the momentary rotation position. This has the effect that the massaging roller 1 does not roll away or hardly so in the state with the rolling surface 4 placed on a horizontal support 5, even with inadvertent pushes. It can thus be stably placed on narrow surfaces, e.g., the edge of a bathtub.

It is indicated in Figure 3 that manipulation means 23 can be provided on the stabilizing ring 14. They can involve a loop on which the massaging roller 1 can be transported, suspended or manipulated in other optional manners. Such a manipulation means 23 is however preferably removable from the stabilizing ring 14 so that it is not an obstacle during massaging. In this case, the stabilizing ring 14 can have at least one fastening means 24 over which the manipulating means 23 can be detachably fastened. For example, a push button or "Velcro" that can collaborate with a counterpiece provided on the manipulation means 23 would be conceivable as the fastening means 24.

Claims

1. Massaging roller for self-massage of the back and spinal column in particular, with a roller body having a rotating rolling surface, characterized in that the roller body (2) is flexible and is provided with a band-like stabilizing ring (14) extending in the direction of rotation (6) of the rolling surface (4) and exerting an inward-directed holding force to assure an essentially cylindrical rolling surface (4).

2. Massaging roller according to Claim 1, characterized in that the stabilizing ring (14) is narrower than the rolling surface (4).

3. Massaging roller according to Claim 1 or 2, characterized in that the roller body (2) has rubber-elastic properties and preferably consists of material with rubber-elastic properties, e.g., rubber or an elastomer.

4. Massaging roller according to one of Claims 1-3, characterized in that the roller body (2) is designed as a hollow body (7).

5. Massaging roller according to Claim 4, characterized in that the roller body (2) designed as a hollow body (7) is under an internal pressure.

6. Massaging roller according to Claim 5, characterized in that the internal pressure of the hollow body (7) is variably adjustable for regulating the hardness.

7. Massaging roller according to one of Claims 1-6, characterized in that the roller body (2) has a cavity (12) closed to the environment and which is filled with a pressure-exerting medium.

8. Massaging roller according to Claim 7, characterized in that air is provided as the pressure-exerting medium and it can be introduced into the cavity (12) as needed, e.g., by means of an air pump.

9. Massaging roller according to Claim 7 or 8, characterized in that the roller body (2) has a special filling and/or emptying opening (13) provided with a valve for the pressure-exerting medium.

10. Massaging roller according to one of Claims 4-9, characterized in that the roller body (2) designed as a hollow body (7) is only partially filled with liquid.

11. Massaging roller according to one of Claims 1-10, characterized in that the stabilizing ring (14) is an integral component of the roller body (2).

12. Massaging roller according to one of Claims 1-11, characterized in that the stabilizing ring (14) encompasses the roller body (2) on the outside and is designed in particular as a separate part with respect to the roller body (2).

13. Massaging roller according to one of Claims 1-12, characterized in that the stabilizing ring (14) is formed by a belt (18) closed in itself.

14. Massaging roller according to one of Claims 1-13, characterized in that the stabilizing ring (14) causes a constriction (17) of the roller body (2) in the area of its application.

15. Massaging roller according to one of Claims 1-14, characterized in that an originally spherical ball under internal pressure functions as the roller body (2) and which is deformed by the stabilizing ring (14) so that the essentially cylindrical rolling surface (4) results.

16. Massaging roller according to one of Claims 1-15, characterized in that at least one manipulation and/or fastening means (23, 24) is provided on the stabilizing ring (14).

One page of drawings

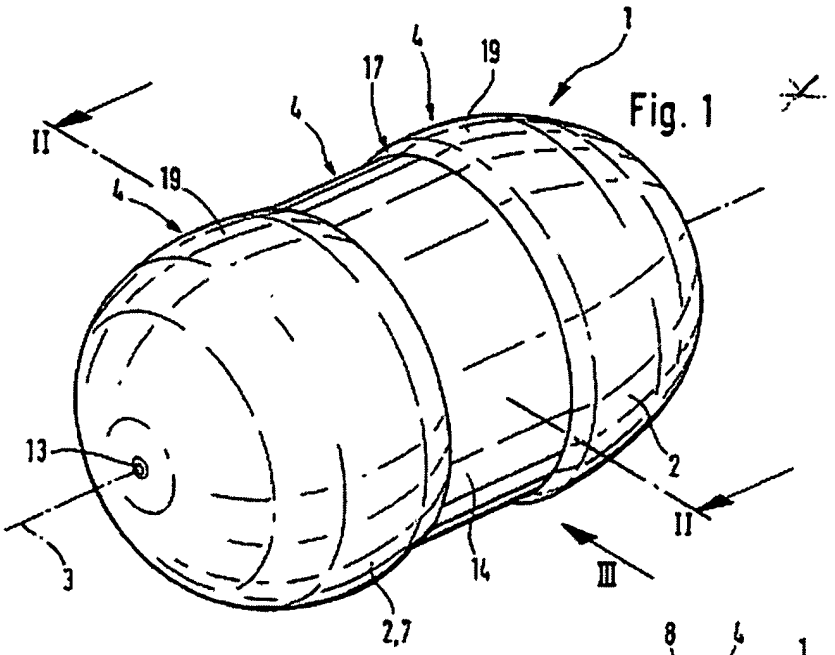

Fig. 1

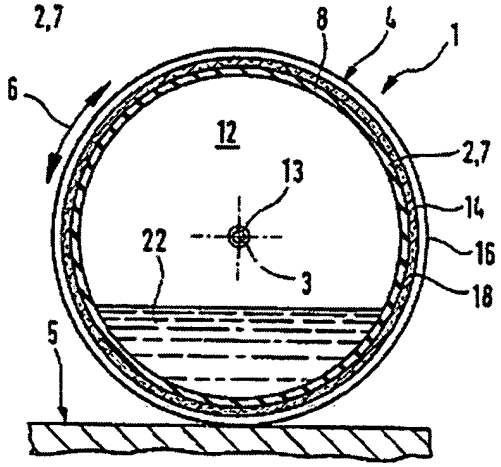

Fig. 2

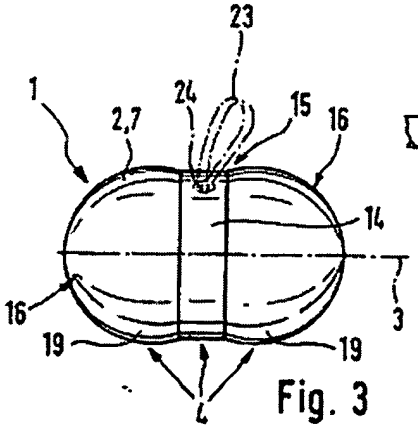

Fig. 3